

Appl. No. 09/844,175  
Amdt. dated 11/12/2003  
Office Action dated 8/27/2003

### In the Claims

Claims 1-30 are canceled.

31. [Currently Amended] A removable electrical interconnect apparatus for removably engaging electrically conductive pads on a semiconductor substrate having integrated circuitry fabricated therein, the apparatus comprising:

a substrate; and

an engagement probe projecting from the substrate to engage a single conductive pad on a semiconductor substrate having integrated circuitry formed in the semiconductor substrate, the engagement probe having an outer surface comprising an apex in the form of at least one knife-edge line and comprising semiconductor material and configured to removably engage the single conductive pad of the substrate comprising operable integrated circuitry and to removably engage another single conductive pad of another substrate also comprising operable integrated circuitry; and

wherein the engagement probe is formed on a projection from the substrate.

32. Cancel.

33. [Original] The removable electrical interconnect apparatus of claim 31 wherein the knife-edge line projects from a penetration stop plane.

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34. [Currently Amended] The removable electrical interconnect apparatus of claim 31 wherein the knife-edge line projects from a penetration stop plane, the knife-edge line having ~~[[a]]~~ tip and a having a base at the penetration stop plane, the tip being a distance from the penetration stop plane of about one-half the thickness of the conductive pad which the apparatus is adapted to engage.

35. [Currently Amended] The removable electrical interconnect apparatus of claim 31 wherein the engagement probe is formed on a projection from the substrate, the knife-edge line ~~projecting~~ projects from a penetration stop plane on the projection.

36. [Currently Amended] The removable electrical interconnect apparatus of claim 31 wherein the engagement probe is formed on a projection from the substrate, the knife-edge line projects from a penetration stop plane on the projection, the knife-edge line having a tip and ~~[[a]]~~ having a base at the penetration stop plane, the tip being a distance from the penetration stop plane of about one-half the thickness of the conductive pad which the apparatus is adapted to engage.

37. [Currently Amended] The removable electrical interconnect apparatus of claim 31 wherein outermost portions of the electrically conductive apexes constitute apex constitutes a first electrically conductive material, and wherein the conductive pads for which the apparatus is adapted to engage have outermost portions constituting a second

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electrically conductive material; the first and second electrically conductive materials being different.

38. [Original] The removable electrical interconnect apparatus of claim 31 wherein the engagement probe is formed from a semiconductor substrate.

39. [Original] The removable electrical interconnect apparatus of claim 31 wherein the knife-edge line includes an outer conductive layer.

40. [Original] The removable electrical interconnect apparatus of claim 31 wherein the outer surface includes plural knife-edge lines configured to engage the single conductive pad.

41. [Original] The removable electrical interconnect apparatus of claim 31 wherein the engagement probe is formed from a semiconductor substrate and the outer surface includes plural knife-edge lines configured to engage the single conductive pad.

42. [Original] The removable electrical interconnect apparatus of claim 31 wherein the engagement probe is formed from a semiconductor substrate and the outer surface includes plural knife-edge lines configured to engage the single conductive pad and the knife-edge lines include outer conductive layers.

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Claims 43-53 are canceled.

54. [Currently Amended] A removable engagement probe having an outer surface comprising an apex in the form of at least one knife-edge line and comprising semiconductor material and sized and positioned to engage a single conductive pad; and wherein the knife-edge line projects from a penetration stop plane; and wherein the outer surface comprises a plurality of apexes having respective tips and bases, and the penetration stop plane is intermediate the bases and substantially parallel to a surface of a substrate.

55. [Original] The removable engagement probe of claim 54 wherein the at least one knife-edge line is formed on a projection from a substrate.

56. Cancel.

57. [Currently Amended] The removable engagement probe of claim 54 wherein ~~the knife-edge line projects from a penetration stop plane, the knife-edge line having a tip and a having a base at the penetration stop plane, the tip being~~ at least one of the tips is at a distance from the penetration stop plane of about one-half the thickness of the conductive pad which the apparatus is adapted to engage.

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58. [Currently Amended] The removable engagement probe of claim 54 wherein the knife-edge line is formed on a projection from a substrate, ~~the knife-edge line projecting from a~~ and projects from the penetration stop plane on the projection.

59. [Currently Amended] The removable engagement probe of claim 54 wherein the knife-edge line is formed on a projection from a substrate, ~~the knife-edge line and projects from~~ [[a]] the penetration stop plane on the projection, the knife-edge line having a tip and [[a]] having a base at the penetration stop plane, the tip of the knife-edge line being a distance from the penetration stop plane of about one-half the thickness of the conductive pad which the apparatus is adapted to engage.

60. [Currently Amended] The removable engagement probe of claim 54 wherein outermost portions of the ~~electrically conductive~~ apices constitute a first electrically conductive material, and wherein the conductive pads pad for which the probe is adapted ~~have to engage~~ has outermost portions constituting a second electrically conductive material; the first and second electrically conductive materials being different.

61. [Original] The removable engagement probe of claim 54 wherein the probe is fabricated from a semiconductor substrate.

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62. [Previously Presented] The removable electrical interconnect apparatus of claim 31 wherein the knife-edge line is sized and positioned to extend elevationally above an uppermost surface of the substrate.

63. [Currently Amended] The removable electrical interconnect apparatus of claim ~~32~~ 31 wherein the projection includes a surface substantially parallel to a surface of the substrate.

64. [Previously Presented] The removable engagement probe of claim 54 wherein the knife-edge line projects elevationally above an uppermost surface of a substrate which defines the penetration stop plane.

65. [Currently Amended] The removable electrical interconnect apparatus of claim 55 wherein the projection has a surface substantially parallel to a surface of a substrate and which defines the penetration stop plane.

66. Canceled.

67. [Previously Presented] The removable electrical interconnect apparatus of claim 31 wherein the substrate comprises semiconductor material.

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68. [Previously Presented] The removable electrical interconnect apparatus of claim 31 wherein the substrate comprises a semiconductor substrate and the engagement probe comprises semiconductor material of the semiconductor substrate.

69. [Previously Presented] The engagement probe of claim 54 wherein the engagement probe comprises semiconductor material.

70. [Previously Presented] The engagement probe of claim 54 wherein the engagement probe comprises semiconductor material formed from a semiconductor substrate.

71. Canceled.

72. Canceled.

73. [New] A removable engagement probe having an outer surface comprising an apex in the form of at least one knife-edge line and comprising semiconductor material and sized and positioned to engage a single conductive pad;

wherein the knife-edge line projects from a penetration stop plane; and

wherein the at least one knife-edge line is formed on a projection from a substrate.

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74. [New] The engagement probe of claim 73 wherein the knife-edge line projects from a penetration stop plane on the projection.

75. [New] The engagement probe of claim 73 wherein the knife-edge line projects from a penetration stop plane on the projection, the knife-edge line having a tip and having a base at the penetration stop plane, the tip being a distance from the penetration stop plane of about one-half the thickness of the conductive pad which the apparatus is adapted to engage

76. [New] The engagement probe of claim 73 wherein the projection has a surface substantially parallel to a surface of a substrate and which defines the penetration stop plane.